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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,859	08/07/2001	Hidegori Kawata	110097	8536
25944	7590	04/08/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			QI, ZHI QIANG	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,859

Applicant(s)

KAWATA, HIDENORI

Examiner

Mike Qi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 5,11-13,16,17 and 19-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-10,14,15 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/10/03;1/12/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art (AAPA) in view of JP 63-274929 (Matsushita et al).

Claims 1 and 14, AAPA discloses (paragraph 0004 – paragraph 0010; Fig.15) that an electro-optical apparatus comprising:

(concerning claim 1)

- a pair of substrates (10, 20);
- a liquid crystal (50) as an electro-optical material disposed between the pair of substrates (10,20);
- TFT (30) as a switching element disposed above one of the substrates (10);
- a light shielding film (11a) disposed at a location opposing the switching element (TFT 30), and the light shielding film (11a) made of a refractory metal compound such as WSi (tungsten silicide);

(concerning claim 14)

- an insulating substrate (10) such as glass;

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- a light shielding film (11a) disposed above the insulating substrate (11a), and the light shielding film (11a) made of a refractory metal compound such as WSi (tungsten silicide).

AAPA does not expressly disclose the light shielding film including a metal layer formed of a refractory metal in a simple substance form or a refractory metal compound and a barrier layer (also made of a refractory metal or a refractory compound containing no oxygen) disposed on at least one surface of the metal layer.

However, Matsushita discloses (Abstract; Fig.1) that uses two layers structure of the light shielding films (4A and 4B) with a high light shielding rate, in which the metal (such as chromium, i.e, a simple substance) light shielding film having high light shielding rate, and the layer containing titanium (also is a refractory metal, and no oxygen) preventing the reflection due to the metallic luster of the metal film. Therefore, the two layers structure of the light shielding film would improve the performance of the light shielding.

Since the two layers structure of the light shielding film has a high light shielding rate and prevents the reflection due to the metallic luster, so that would improve the performance of the light shielding.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use two layers structure of the light shielding film as claimed in claims 1 and 14 for achieving high light shielding rate and improving the performance of the light shielding.

Claims 2 and 3, AAPA (Fig.15) discloses that the light shielding film (11a) being disposed between the one of the substrates (10) and the switching element (TFT 30) and the light shielding film facing the liquid crystal layer (the electro-optical material). Concerning the barrier layer disposed on the side facing the switching elements, that is the same limitation described in claim 1 such as the barrier layer disposed on the metal layer and that means must be facing the TFT; and as the explanation of the AAPA in view of Matsushita above that would have been at least obvious.

Claim 4, concerning the light shielding film including a light shielding metal layer and a light-absorbable metal layer as the explanation of the AAPA in view of Matsushita above, such as Matsushita discloses (Abstract; Fig.1) that uses two layers structure of the light shielding films (4A and 4B) with a high light shielding rate, in which the metal (such as chromium) light shielding film having high light shielding rate, and the layer containing titanium (also is a refractory metal) preventing the reflection due to the metallic luster of the metal film, that is to absorb the reflection due to the metallic luster of the metal film. Therefore, the two layers structure of the light shielding film would improve the performance of the light shielding. Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use two layers structure of the light shielding film as claimed in claim 4 for achieving high light shielding rate and improving the performance of the light shielding.

Claim 6, AAPA discloses (Fig.15) that the light shielding film (11a) serving to define a display area, because the light shielding film (11a) disposed corresponding to

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the pixel area. All the limitations in claim 6 are the same as the claim 1, and that would be a redundant claim.

3. Claims 7-10, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Matsushita as applied to claims 1-4, 6 and 14 above, and further in view of US 6,521,913 (Murade).

Claim 7, still lacking is the limitation such that the light shielding film being connected to a fixed potential.

However, Murade discloses (col.10, lines 14 – 31) that the light shielding film is connected to a constant potential source, that is the light shielding film being connected to a fixed potential, and with this configuration, the characteristics of the thin film transistor are prevented from being changed and deteriorated due to variation in the electric potential of the light shielding film.

Since the light shielding film being connected to a fixed potential would prevent the characteristics of the thin film transistor changing and deteriorating, because there are no variation in the electric potential of the light shielding film.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange the light shielding film being connected to a fixed potential as claimed in claim 7 for preventing the characteristics of the thin film transistor changing and deteriorating.

Claims 8 and 9, Concerning the material of the barrier layer, Matsushita discloses (Abstract; Fig.1) that uses two layers structure of the light shielding films (4A and 4B) with a high light shielding rate, in which the metal (such as chromium, i.e., a

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refractory metal) light shielding film having high light shielding rate, and the layer containing titanium (also is a refractory metal) preventing the reflection due to the metallic luster of the metal film. Furthermore, Murada also discloses (col.9, lines 36-45) that the material of the light shielding film is a metallic simple substance such as contains W (tungsten) which is a high-melting-point metal (refractory metal). Since the two layers structure of the light shielding film would improve the performance of the light shielding. Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use a material such as tungsten for the material of the barrier layer as claimed in claim 8 for improving the performance of the light shielding. Concerning the claim 9, using WSi to form the barrier layer that would have been an obvious variation. Because the material of the barrier layer also is a refractory metal or refractory metal compound, and the material WSi is a refractory metal compound having an excellent ability to block light.

Claim 10, Concerning the material of Ti for the metal layer, Murade discloses (col.9, lines 36-45) that the material of the light shielding film uses Ti, because Ti is a opaque high-melting-point metal and using Ti as the metal layer for the light shielding film would prevent from being broken or melted by a high temperature. Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use Ti as the metal layer for the light shielding film as claimed in claim 10 for preventing from being broken or melted by a high temperature.

Claims 15 and 18, Concerning the two layers structure of the light shielding film, Matsushita discloses (Abstract; Fig.1) that uses two layers structure of the light

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shielding films (4A and 4B) with a high light shielding rate, in which the metal (such as chromium) light shielding film having high light shielding rate, and the layer containing titanium (also is a refractory metal) preventing the reflection due to the metallic luster of the metal film. Therefore, the two layers structure of the light shielding film would improve the performance of the light shielding.

Since the two layers structure of the light shielding film has a high light shielding rate and prevents the reflection due to the metallic luster, so that would improve the performance of the light shielding.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use two layers structure of the light shielding film as claimed in claims 15 and 18 for achieving high light shielding rate and improving the performance of the light shielding.

Response to Arguments

4. Applicant's arguments filed on Jan.15, 2004 have been fully considered but they are not persuasive.

Applicant filed English translation for the priority of this application, and disqualified the reference US 2002/0018164 (Ko et al) as a prior art. However, the references of JP 63-274929 (Matsushita et al) and JP 4-1728 (komori et al), etc, still can read the limitations as claimed such as the two layers structure for the light shielding film, and to establish the obviousness.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299.

The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi
March 22, 2004



DUNG T. NGUYEN
PRIMARY EXAMINER